

1 **DIRECT TESTIMONY**

2 **OF**

3 **KEVIN B. MARSH**

4 **ON BEHALF OF**

5 **SOUTH CAROLINA ELECTRIC & GAS COMPANY**

6 **DOCKET NO. 2012-203-E**

7
8 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.**

9 A. My name is Kevin Marsh and my business address is 220 Operation Way,
10 Cayce, South Carolina. I am Chairman and Chief Executive Officer of SCANA
11 Corporation and South Carolina Electric & Gas Company (“SCE&G” or the
12 “Company”).

13 **Q. DESCRIBE YOUR EDUCATIONAL BACKGROUND AND BUSINESS**
14 **EXPERIENCE.**

15 A. I am a graduate, magna cum laude, of the University of Georgia, with a
16 Bachelor of Business Administration degree with a major in accounting. Prior to
17 joining SCE&G, I was employed by the public accounting firm of Deloitte,
18 Haskins & Sells, now known as Deloitte & Touche, L.L.P. I joined SCE&G in
19 1984 and have served as Controller, Vice President of Corporate Planning, Vice
20 President of Finance, and Treasurer. From 1996 to 2006, I served as Senior Vice
21 President and Chief Financial Officer (“CFO”) of SCE&G and SCANA. From
22 2001-2003, while serving as CFO of SCE&G and SCANA, I also served as

1 President and Chief Operating Officer of PSNC Energy in North Carolina. In May
2 of 2006, I was named President and Chief Operating Officer of SCE&G. In early
3 2011, I was elected President and Chief Operating Officer of SCANA and became
4 Chairman and Chief Executive Officer of SCANA on December 1, 2011.

5 **Q. HAVE YOU EVER TESTIFIED BEFORE THIS COMMISSION IN THE**
6 **PAST?**

7 A. Yes. I have testified in a number of different proceedings.

8 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
9 **PROCEEDING?**

10 A. In the petition in this proceeding (the "Petition"), the Company requests
11 that the Public Service Commission of South Carolina (the "Commission")
12 approve updated construction schedules and schedules of forecasted capital costs
13 for the project to construct V. C. Summer Units 2 & 3 (the "Units"). My
14 testimony explains the requests contained in the Petition and places it in the
15 context of the commitments that SCE&G has made to this Commission, the South
16 Carolina Office of Regulatory Staff ("ORS"), the State of South Carolina, its
17 investors and the public concerning how it would approach this project. I also
18 discuss why approving the updated schedules is important to the continued success
19 of the project.

1 **Q. WHAT OTHER WITNESSES ARE PRESENTING DIRECT TESTIMONY**
2 **ON BEHALF OF THE COMPANY?**

3 A. The other witnesses presenting direct testimony on behalf of the Company
4 are Mr. Stephen Byrne, Mr. David Lavigne, Mr. Hubert C. (“Clay”) Young, III,
5 and Ms. Carlette Walker.

6 1. Mr. Byrne is President for Generation and Transmission and Chief
7 Operating Officer of SCE&G. His testimony updates the Commission and
8 the parties on the current status of the construction of the Units and presents
9 the updated construction schedule for the project. Mr. Byrne also testifies
10 concerning the change orders to the EPC Contract that are reflected in the
11 current cost schedules, and the claims Westinghouse/Shaw has made for
12 recovery of additional costs that it attributes to permitting delays, changing
13 regulatory requirements and unanticipated site conditions.

14 2. Mr. David Lavigne is the General Manager for Operational Readiness
15 within New Nuclear Deployment (“NND”) at SCE&G. Mr. Lavigne will
16 testify concerning the current staffing plans and budgets for the NND
17 group, including both the construction management areas, which oversee
18 engineering, licensing and construction of the Units, and the operational
19 readiness and training areas, which hire, train and equip the staffs to operate
20 and maintain the Units once constructed.

1 3. Mr. Young is Manager of Transmission Planning for SCE&G. He testifies
2 concerning the status of the transmission projects associated with the Units
3 and the new cost forecasts for those projects.

4 4. Ms. Walker is Vice President for Nuclear Finance Administration at
5 SCANA. She sponsors the current cost schedules for the project and
6 presents accounting, budgeting and forecasting information supporting the
7 reasonableness and prudence of the adjustments in cost forecasts. Ms.
8 Walker also testifies in further detail concerning key drivers of the changes
9 in the Owners cost forecast.

10 All Company witnesses testify in support of the reasonableness and
11 prudence of the updated cost schedules and the construction costs they represent.
12 All of us have extensive knowledge of the project and have been involved in the
13 ongoing effort to ensure that the project is managed in a prudent, cost-effective
14 and reasonable manner. From my knowledge of the project and my perspective as
15 Chief Executive Officer, it is my firm opinion that the construction schedule and
16 capital cost schedule presented here are prudent and reasonable in every respect
17 and that the project is being managed in a cost-effective and responsible manner.
18 The other witnesses are providing similar testimony about the project from their
19 particular areas of knowledge and expertise.

1 **Q. PLEASE PROVIDE AN OVERVIEW OF THE REGULATORY HISTORY**
2 **OF THE PROJECT INCLUDING THE INITIAL BASE LOAD REVIEW**
3 **ACT (“BLRA”) PROCEEDINGS CONCERNING THE PROJECT.**

4 A. As the Commission is aware, in 2005 SCE&G began to evaluate the
5 alternatives available to meet its customers’ growing need for generation resources
6 after 2014. The Company conducted this evaluation in light of its aging fleet of
7 coal generating units, volatile global fossil-fuel markets and the increasingly
8 stringent and costly environmental regulations imposed on fossil-fuel generation,
9 particularly coal generation. In its evaluation, the Company sought proposals
10 from three suppliers of nuclear generation units. The resulting evaluations and the
11 negotiation of an Engineering, Procurement, and Construction Agreement (the
12 “EPC Contract”) for the Units took place over the period 2005-2008. On May 23,
13 2008, the Company signed the EPC Contract with Westinghouse Electric
14 Company, and Stone & Webster, which is a part of the Shaw Group
15 (“Westinghouse/Shaw”). Later that month, the Company filed a Combined
16 Application under the BLRA seeking a full regulatory review by the Commission
17 and ORS of the prudence of the project and the reasonableness of the EPC
18 Contract.

19 **Q. WHAT WAS THE BASIS FOR THE INITIAL COST ESTIMATES**
20 **PRESENTED TO THE COMMISSION DURING THAT REVIEW?**

21 A. The capital cost schedules that were presented to the Commission on May
22 30, 2008, were based on the construction cost schedules created during negotiation

1 of the EPC Contract as well as forecasts of Owners cost and Transmission costs.
2 SCE&G prepared these forecasts from multiple sources in 2005-2008 to support
3 its comparative evaluation of nuclear technology suppliers. Mr. Lavigne discusses
4 the sources of this information in his testimony. The cost schedules presented to
5 the Commission in 2008 also included a reasonable forecast of owner's
6 contingency for the project.¹ The total forecasted cost of the project was \$4.5
7 billion.

8 **Q. WHAT WAS THE RESULT OF THE 2008-2009 BLRA PROCEEDINGS?**

9 A. These initial cost forecasts for the Units were the subject of extensive
10 discovery and review by expert witnesses for the ORS and others. On March 2,
11 2009, the Commission issued Order No. 2009-104(A) approving those capital cost
12 schedules and associated owner's contingencies. The South Carolina Supreme
13 Court reviewed and upheld the Commission's determinations as to the need for the
14 Units and their prudence finding that "based on the overwhelming amount of
15 evidence in the record, the Commission's determination that SCE&G considered
16 all forms of viable energy generation, and concluded that nuclear energy was the
17 least costly alternative source, is supported by substantial evidence." *Friends of*
18 *Earth v. Pub. Serv. Comm'n*, 387 S.C. 360, 369, 692 S.E.2d 910, 915 (2010). In a
19 related case, *South Carolina Energy Users Comm. v. South Carolina Pub. Serv.*
20 *Comm'n*, 388 S.C. 486, 697 S.E.2d 587 (2010), the Court ruled that costs which

¹ Unless otherwise specified, all cost figures in this testimony are stated in 2007 dollars net of Allowance for Funds Used During Construction and reflect SCE&G's share of the cost of the Units.

1 were not itemized to specific expense items—specifically owner’s contingency
2 costs—could not be included in the Commission-approved cost schedules for the
3 Units. In that opinion, the Court indicated that the BLRA allowed the Company to
4 return to the Commission to seek approval of additional expenditures as
5 circumstances required.

6 **Q. PLEASE DESCRIBE THE UPDATES THAT HAVE OCCURRED TO THE**
7 **COST AND CONSTRUCTION SCHEDULES FOR THE UNITS SINCE**
8 **ORDER NO. 2009-104(A) WAS ISSUED.**

9 A. Since Order No. 2009-104(A) was issued in March 2009, SCE&G has
10 come to the Commission twice to update the cost and construction schedules for
11 the Units. In 2009, SCE&G updated the construction schedule and associated cash
12 flow forecasts to reflect Westinghouse/Shaw’s issuance of a site-specific
13 integrated construction schedule for the project. The EPC Contract required
14 Westinghouse/Shaw to begin preparing such a schedule as soon as it was signed.
15 SCE&G presented that schedule to the Commission for review as soon as practical
16 after it was accepted by SCE&G. In the 2009 update filing, the timing of cash
17 flows were adjusted, but the total forecasted cost for the Units of \$4.5 billion in
18 2007 dollars did not change.

19 In 2010, consistent with the decision of the South Carolina Supreme Court
20 in *South Carolina Energy Users Comm. v. South Carolina Pub. Serv. Comm’n*,
21 388 S.C. 486, 697 S.E.2d 587 (2010), the Company removed the owner’s
22 contingency costs from the prior cost forecasts. In addition, in the 2010 update

1 proceeding, the Company identified and itemized approximately \$174 million in
2 costs to specific cost categories for the project that it would have accounted for
3 using owner's contingency costs before the court decision. As a result, in Order
4 No. 2011-345, the Commission approved cost schedules for the project that
5 reduced the approved cost estimate to \$4.3 billion.

6 **Q. PLEASE EXPLAIN THE CAPITAL COST SCHEDULE ADJUSTMENTS**
7 **THAT ARE PRESENTED IN THE PETITION.**

8 A. In this proceeding, SCE&G is presenting updated capital cost forecasts for
9 the Units that identify an additional \$283 million in prudent and necessary costs
10 for the project. There are four categories of costs that comprise this amount:

11 a. On July 11, 2012, SCE&G and Westinghouse/Shaw entered into an
12 agreement to settle claims associated with the delay in issuance of the COL; the
13 redesign of the AP1000 shield building to strengthen it against aircraft impacts;
14 the redesign of certain structural modules to be used in the Units; and the response
15 to unanticipated rock conditions in the Unit 2 foundation area. The settlement of
16 these claims accounts for \$137.5 million of the proposed adjustment to forecasted
17 costs presented here.

18 b. Since 2010, SCE&G has continued to refine and update its forecast
19 of Owners cost related to the project. These updates include updated requirements
20 for staffing the Units based on detailed operations and maintenance planning, new
21 standards emerging in response to the recent Fukushima events, recent guidance
22 from the NRC concerning SCE&G's responsibility as holder of the Combined

1 Operating Licenses (“COL”) for the Units, new forecasts of hiring based on
2 training and licensure requirements, and new forecasts of the cost and number of
3 personnel that will be necessary to oversee the safety, quality, and cost of the
4 construction project. In addition, the updates also reflect updated forecasts of the
5 costs of facilities and information technology systems necessary to support the
6 Units when constructed. These updates to Owners cost account for \$131.6 million
7 of the changes to cost forecasts.

8 c. SCE&G has updated the forecasted cost of the transmission projects
9 necessary to route power from the Units onto the grid. These updates are based on
10 additional design and engineering work, updated evaluations of power flows, and
11 more complete information about right-of-way and property requirements.
12 Updates to transmission costs comprise approximately \$7.9 million of the total
13 changes to forecasts.

14 d. Since Order No. 2011-345, three change orders have been negotiated
15 to the EPC Contract. They relate to cyber security, health care costs, and the
16 redesign of certain wastewater piping. These change orders represent
17 approximately \$6 million of the proposed updates.

18 **Q. PLEASE EXPLAIN THE UPDATED CONSTRUCTION SCHEDULE**
19 **THAT IS BEING PRESENTED IN THE PETITION.**

20 A. The construction schedule approved in Order No. 2010-12 was based on the
21 expectation that the COL for the Units would be issued in mid-2011. For various
22 reasons, the license was not issued until March 30, 2012. When the likelihood of

1 delay was recognized, SCE&G and Westinghouse/Shaw began analyzing
2 alternatives for rescheduling the construction plan for the Units and began
3 negotiating Westinghouse/Shaw's claims for a change order under the EPC
4 Contract for the additional costs associated with the delay in COL issuance and
5 related issues. On February 10, 2012, SCE&G instructed Westinghouse/Shaw to
6 proceed under the scenario that delayed the completion date of Unit 2 until March
7 15, 2017, and accelerated the completion date of Unit 3 to May 15, 2018. The
8 proposed construction schedule that is attached to Mr. Byrne's testimony is based
9 on that rescheduling decision.

10 **Q. WHAT IS THE EFFECT OF THESE PROPOSED ADJUSTMENTS?**

11 A. As Ms. Walker testifies, the net effect of these changes is to increase the
12 capital cost schedules for the Units in 2007 dollars from \$4.3 billion, as approved
13 in Order No. 2011-435, to \$4.6 billion. In spite of the increase in costs in 2007
14 dollars, lower escalation rates have reduced SCE&G's total projected cost of the
15 Units in future dollars by \$25 million as compared to the similar projection made
16 at the time of the Order No. 2011-345. The cost of the plant in future dollars,
17 measured using current inflation rates, remains approximately \$5.8 billion as
18 shown on Exhibit 1 to the Petition. This amount is approximately \$500 million
19 less than the cost of the Units in future dollars as presented in the original 2008-
20 2009 BLRA proceedings. At the time of Order No. 2009-104(A), the projected
21 cost of the Units in future dollars was \$6.3 billion.

1 **Q. DOES THE REQUEST FOR BLRA APPROVAL OF THESE UPDATED**
2 **COST SCHEDULES REFLECT PROBLEMS IN THE PROJECT?**

3 A. No. The request for BLRA approval of these updated construction and cost
4 schedules does not reflect any difficulty with the project. We are accelerating the
5 completion date for the project. Based on current escalation rates the cost of the
6 project in future dollars is \$500 million below the original cost estimates. The
7 project is proceeding satisfactorily and the adjustments in construction schedules
8 and cost forecasts that are presented here are a normal and expected part of
9 managing a twelve-year, \$5.8 billion dollar project. In addition, as discussed
10 below, the project has now cleared major licensing, permitting, and procurement
11 hurdles. The work of the past four years has put us in a very good position to
12 complete these Units at a reasonable cost and on a reasonable schedule to meet the
13 needs of our customers.

14 **Q. WHAT WILL THE EFFECT OF THE UNITS BE ON SCE&G'S SYSTEM?**

15 A. In 2019, we plan to have an additional 1,229 MW of efficient and non-
16 emitting nuclear generation on line and serving the people of South Carolina. We
17 project that in 2019, we will have reduced our carbon emissions by 54% compared
18 to their 2005 levels, and 35% compared to their levels in 1995, in large part
19 because of the Units. We also project that in 2019, we will have a system with a
20 very balanced mix of fuel sources: on a capacity basis our generation mix will be
21 27% coal, 28% natural gas, 31% nuclear and 14% hydro/biomass. In 2019, based
22 on how we dispatch our plants, we project that 60% of our energy will come from

1 nuclear and hydro/biomass and only 24% of our energy will be generated using
2 coal. We continue to believe that over the long planning horizon that is involved
3 when procuring base load generation units, the unbalanced reliance on any single
4 fuel source is dangerous from both a cost and a reliability standpoint no matter
5 how cheap or available that fuel may be in the short term.

6 **CURRENT STATUS OF THE NUCLEAR PROJECT**

7 **Q. PLEASE DESCRIBE THE CURRENT STATUS OF THE NUCLEAR**
8 **PROJECT FROM YOUR PERSPECTIVE.**

9 A. During the initial four years of the project, the project team has successfully
10 resolved or mitigated many of the most important challenges that were identified
11 in 2008 as applying to the initial phases of the project. Those challenges include:

- 12 • the challenges associated with initial licensing and permitting for the
13 project;
- 14 • the challenges associated with completing the design of the AP1000 Units;
- 15 • the challenges associated with initial procurement and supply chain
16 management for components and equipment for the Units;
- 17 • the challenges associated with initial site work; and
- 18 • the challenges associated with establishing support in the financial
19 community for the project.

20 In addition, we have carried through on a number of important commitments we
21 made to this Commission, to ORS, to our investors and to the public concerning
22 how we would manage this project and related issues, including our approach to

1 retiring older coal units, to alternative energy sources and to demand side
2 reduction and energy efficiency programs (“DSM”).

3 **Q. WHEN THE INITIAL BASE LOAD REVIEW ACT APPLICATION WAS**
4 **FILED IN 2008, WHAT WAS THE SITUATION RELATED TO INITIAL**
5 **LICENSING AND PERMITTING?**

6 A. When the initial BLRA application was filed, the Nuclear Regulatory
7 Commission (“NRC”) was in the early stages of reviewing the 1,500 page COL
8 application for the Units. The NRC was also in the early stages of reviewing the
9 reference plant COL application that provided the vehicle for NRC licensing of the
10 standard AP1000 plant configuration. Furthermore, in separate proceedings the
11 NRC was considering revisions to certain aspects of the AP1000 reactor design to
12 strengthen its resistance to aircraft impacts, and to address other design issues and
13 make other improvements. At that time, the environmental report and wetlands
14 permit applications for the project were also in their initial stages of review by the
15 United States Army Corps of Engineers and related agencies including the United
16 States Environmental Protection Agency and the United States Fish and Wildlife
17 Service.

18 **Q. WHAT RISKS OR CHALLENGES DID LICENSING AND PERMITTING**
19 **POSE FOR THE PROJECT?**

20 A. The 2008 BLRA application stated that “the risks related to the COLA
21 process include the fact that many of the NRC regulations, standards and
22 processes under which the licensing of the Units will take place are new and

1 relatively untested; NRC staffing to support the new round of nuclear licensing is
2 still being assembled; and many of the personnel that will be involved in this
3 licensing process have not been part of the licensing of new nuclear units at any
4 other time in their careers.” BLRA Application, Docket No. 2008-196-E, Exhibit
5 J, p. 3. In addition, SCE&G stated that while it did not believe that it was likely
6 that the licensing process would uncover material issues related to the Units, “the
7 emergence of substantive design-related or process-related issues are not beyond
8 possibility.” Id. at p. 12. In this regard, SCE&G identified that one of the most
9 significant risks to the project was “the risk of delay in the issuance of a COL, the
10 resulting disruption in the construction schedule, and the increase in costs that
11 such a delay would represent.” Id.

12 **Q. WHAT DID SCE&G COMMIT TO DO ABOUT THESE CHALLENGES?**

13 A. SCE&G committed itself to actively oversee and monitor these licensing
14 and permitting efforts, and to intervene where necessary to ensure that they were
15 conducted in a timely and professional manner. SCE&G specifically committed to
16 the Commission that it would resolve these licensing and permitting issues and
17 obtain the COL within the 18 month scheduling contingency that the Commission
18 approved in Order No. 2009-104(A).

19 **Q. WHAT WAS THE RESULT?**

20 A. Over the past four years, working with Westinghouse/Shaw and other
21 members of the industry, we have overcome the challenges posed by the initial
22 licensing and permitting of the Units and completing their design. As of June

1 2012, the major licenses, permits, and environmental certifications for the
2 construction and operations of the Units are now in hand or forthcoming. These
3 permits and licenses include:

- 4 1. The Design Control Document (“DCD”) amendments for the
5 AP1000 design through DCD-19.
- 6 2. The reference plant COL for the AP1000 reactor.
- 7 3. The site specific COL for the Units themselves.
- 8 4. The Finding of No Significant Environmental Impact related to the
9 construction and operations for the Units as required under the
10 National Environmental Policy Act (“NEPA”).
- 11 5. The Clean Water Act Section 401 certification for the project as to
12 its ability to operate in compliance with federal Clean Water Act
13 requirements.
- 14 6. The Clean Water Act Section 404 permit required for certain work
15 on intermittent stream banks on site that qualify as federally
16 protected wetlands.
- 17 7. FERC permits for cooling water withdrawals, construction of
18 withdrawal structures within FERC project boundaries and related
19 construction work.
- 20 8. The National Pollution Discharge Elimination System (“NPDES”)
21 permits for discharges of blow-down water from the cooling towers

1 and other waste water discharges, which is in the final stages of
2 review and is expected shortly.

3 The completion of the initial licensing, permitting and design work for the Units
4 represents the completion of a group of major milestones for the project. A major
5 risk factor that was identified in 2008 has now been resolved.

6 **Q. IN OBTAINING THESE LICENSES AND PERMITS DID YOU MEET**
7 **YOUR COMMITMENTS AS TO SCHEDULING?**

8 A. Yes. We have met our specific commitment to have the initial licensing
9 and permitting issues for the Units resolved within the 18 month schedule
10 contingency approved by the Commission in Order No. 2009-104(A). However,
11 for reasons that Mr. Byrne will explain, the COL was issued approximately nine
12 months later than what we anticipated when we formulated our construction
13 schedules and cash flow projections. To account for this fact, and to increase the
14 efficiency of the construction program going forward, we have reached an
15 agreement with Westinghouse/Shaw to delay the substantial completion date for
16 Unit 2 by 11 and one-half months, from April 1, 2016, to March 15, 2017, and
17 accelerate the substantial completion date for Unit 3 by seven and one-half months
18 to May 15, 2018. As Mr. Byrne will testify, this sequencing of the construction of
19 the two Units creates construction efficiencies that will mitigate some of the
20 additional costs of the licensing delay and related design changes by \$15.9 million.
21 The cost and construction schedules presented in this proceeding reflect those
22 substantial completion dates.

1 **Q. WILL THERE BE ADDITIONAL COSTS ASSOCIATED WITH THESE**
2 **SCHEDULE CHANGES?**

3 A. Yes, as I mentioned above, there will be additional costs associated with
4 these schedule changes, as well as the design changes that arose out of the
5 licensing review. As mentioned above, we have negotiated agreements with
6 Westinghouse/Shaw as to the amount of those additional costs under the EPC
7 Contract.

8 **Q. SINCE 2008, WHAT COMMITMENTS HAS SCE&G MADE**
9 **CONCERNING ITS APPROACH TO THE ADMINISTRATION OF THE**
10 **EPC CONTRACT?**

11 A. SCE&G has consistently operated under a commitment to the Commission,
12 ORS and the public to use the provisions of the EPC Contract to manage and
13 control construction costs and to ensure the safety, quality and timeliness of the
14 construction project.

15 **Q. WHAT HAVE YOU DONE TO FOLLOW THROUGH ON THIS**
16 **COMMITMENT?**

17 A. In negotiating the EPC Contract, we persuaded Westinghouse/Shaw to
18 accept more than 50% of the EPC Contract work being assigned to Fixed/Firm
19 cost categories, which are the categories under which Westinghouse/Shaw bears
20 the principal price risk. In 2010, we persuaded Westinghouse/Shaw to shift an
21 additional \$315 million in EPC costs to Firm/Fixed categories. At that point,
22 approximately two-thirds of the EPC Contract costs were in Fixed/Firm

1 categories. As of end of the second quarter of 2012, only a little more than one-
2 fourth of the total EPC Contract costs remains to be spent in categories that are not
3 subject to Fixed/Firm pricing limitations.

4 Limiting price risk is a major benefit in itself. But of equal importance is
5 how shifting price risks to Westinghouse/Shaw improves SCE&G's ability to
6 administer the project effectively. For scopes of work where Westinghouse/Shaw
7 bears price risk, the NND teams review invoices for milestone completion, and for
8 proper coding, accounting and allocation of costs. For these scopes of work, there
9 is no need for our NND teams to audit cost data in the same detail as where the
10 EPC Contract provides for Firm or Indexed pricing. Work load is reduced and
11 opportunities for price disputes are reduced or eliminated. Shifting price risk to
12 Westinghouse/Shaw allows SCE&G's personnel to focus on the safety, quality
13 and timeliness of the work done.

14 **Q. WHAT IS SCE&G'S APPROACH WHERE IT DOES BEAR THE PRICE**
15 **RISK?**

16 A. Where SCE&G does bear the price risk, we have put in place very
17 experienced and determined teams that audit Westinghouse/Shaw invoices and
18 work practices carefully, identify invoicing problems and contest costs where
19 there is a basis for doing so. Our oversight teams carefully manage the change
20 order process for the benefit of the Company and its customers.

21 To date, apart from the Change Order No. 16 related to COL delay costs,
22 and the Change Order No. 8 which shifted \$315 million to Fixed/Firm pricing,

1 there have been eight change orders involving substantive changes to costs and
2 scopes of work under the EPC Contract. These eight change orders total \$7.5
3 million or less than one-quarter of one percent of the project's cost forecast.

4 **Q. PLEASE DISCUSS HOW THE RESOLUTION OF THE COL DELAY**
5 **CLAIMS AND RELATED CLAIMS REFLECTS THE COMPANY'S**
6 **COMMITMENTS TO EFFECTIVELY MANAGE THE EPC CONTRACT**
7 **FOR THE BENEFIT OF THE PROJECT.**

8 A. As mentioned above, on July 11, 2012, SCE&G and Westinghouse/Shaw
9 entered into an agreement to adopt a new construction schedule for the Units and
10 to resolve claims related to the COL delay and other matters. The resulting
11 adjustment to EPC Contract cost was \$137.5 million or \$76.1 million less than
12 Westinghouse/Shaw's initial cost analysis. This timely and comprehensive
13 resolution of these matters occurred in part because during the period 2011-2012,
14 SCE&G pushed Westinghouse/Shaw both to create an effective construction plan
15 to respond to the delay and to quantify and substantiate any claims they might
16 have for compensation related to that delay and to design and licensing issues. We
17 put a great deal of pressure on Westinghouse/Shaw to negotiate a resolution of
18 these claims quickly and in good faith for the benefit of the project. We made it
19 clear that it was our expectation that these claims would be resolved before a full
20 notice to proceed was given to move forward with the work.

1 **Q. WHAT IS THE RESULT OF HAVING DONE SO?**

2 A. As Mr. Byrne will testify, we believe that the resulting agreement, standing
3 alone, is a prudent and fair resolution of these claims. But in addition, by
4 resolving these issues quickly and without litigation we have eliminated from the
5 project the threat of a divisive and distracting lawsuit between the principals at this
6 critical stage in the project. Because we were successful in these negotiations,
7 SCE&G was able to give Westinghouse/Shaw full notice to proceed with
8 construction when the COL was issued without the threat of a protracted lawsuit
9 hanging over the project. We are able to go forward with one objective, which is
10 building two safe, reliable nuclear Units that will provide the people of this State
11 with a reasonably priced, non-emitting source of baseload power for generations to
12 come.

13 **Q. WERE YOU ABLE TO MEET YOUR COMMITMENT TO HAVE THE**
14 **SITE PREPARATION WORK READY TO PLACE THE FIRST**
15 **NUCLEAR SAFETY CONCRETE WHEN THE COL WAS ISSUED?**

16 A. One of our principal goals in this phase of the project has been to ensure
17 that the initial development plan for the Jenkinsville site was substantially
18 completed in time to support the placement of nuclear safety-related concrete as
19 soon as the COL was issued. Through the diligence of our teams and
20 Westinghouse/Shaw, we were able to complete initial site work, in which 11
21 million cubic yards of earth were moved, a railroad was relocated, nearly 10 miles
22 of construction roads and a heavy haul bridge were constructed or paved, 21 miles

1 of pipe were laid, two high volume concrete batch plants were built and put into
2 operation, and supporting structures and facilities with 680,000 square feet under
3 roof were constructed. In all, 5.4 million man hours of work have been done on
4 the site since 2008 with an admirable safety record. We placed the first nuclear
5 safety-related concrete on Tuesday April 3, 2012, the second business day after the
6 COL was issued.

7 **Q. WHERE WAS THE FIRST NUCLEAR SAFETY-RELATED CONCRETE**
8 **PLACED?**

9 A. The first nuclear safety-related concrete that was placed for the Units was
10 the dental, leveling and mud mat concrete in the basement area of Unit 2.
11 Westinghouse/Shaw had planned to place this concrete before the COL was
12 issued, but learned early in the project that this was considered work that could not
13 proceed until the COL was issued.

14 **Q. WHAT DID YOU SAY IN 2008 ABOUT THE CHALLENGE OF**
15 **REESTABLISHING AN ACTIVE NUCLEAR SUPPLY CHAIN THAT**
16 **MEETS EXACTING NUCLEAR SAFETY STANDARDS?**

17 A. In the 2008 BLRA proceedings, we identified reestablishing an effective
18 supply chain for nuclear construction as a major challenge for the project, which
19 requires a supply chain that is able to do high-quality, timely work under the
20 exacting quality assurance and quality control (“QA/QC”) standards that apply to
21 nuclear-safety related construction. We said:

1 *The supply chain for nuclear-grade plant components has not*
2 *been supported by new construction for some decades and will need*
3 *to be significantly expanded to meet the requirements of this new*
4 *construction cycle. . . . Quality controls and manufacturing*
5 *standards for components for nuclear plants are very stringent and*
6 *the processes involved may place unique demands on component*
7 *manufacturers. It is possible that manufacturers of unique*
8 *components (e.g., steam generators and pump assemblies or other*
9 *large components or modules used in the Units) and manufacturers*
10 *of other sensitive components may encounter problems with their*
11 *manufacturing processes or in meeting quality control standards.*

12 BLRA Application, Docket No. 2008-196-E, at Exhibit J.

13 **Q. HAVE YOU BEEN ABLE TO MEET THIS CHALLENGE?**

14 A. SCE&G has devoted a great deal of time and attention in resolving QA/QC
15 issues. Beginning in 2008, we assembled a team of capable and skilled experts in
16 QA/QC oversight. Along with their counterparts at Westinghouse/Shaw, they
17 have reviewed QA/QC programs for suppliers in all parts of this project's supply
18 chain. The members of the SCE&G team have conducted on-site inspections and
19 have called suppliers and Westinghouse/Shaw to account when issues have arisen.
20 They have assisted suppliers in resolving QA/QC issues. As a result of their
21 efforts, and with SCE&G's active involvement, QA/QC problems have been

1 identified early in the project and for the present at least appear largely to be
2 resolved.

3 **Q. PLEASE ELABORATE.**

4 A. Presently, all major equipment procurements have been placed. Suppliers'
5 QA/QC programs appear to be functioning as intended, and by all indications the
6 fabrication of components for the Units appears to be progressing well in factories
7 around the world. With the exception of a limited number of components for Unit
8 3, all major equipment and components for the Units are either in production or
9 fabrication of them is finished. We intend to maintain a high level of vigilance on
10 these suppliers and the quality of their work. Part of the reason we are seeking to
11 increase staffing and associated cost projections is to allow us to do so.

12 **Q. WHAT ABOUT QA/QC AT SHAW MODULAR SOLUTIONS?**

13 A. Our most significant area of concern involves the module fabrication efforts
14 by Shaw Modular Solutions ("SMS") at its facility in Lake Charles, Louisiana.
15 We have monitored the work at SMS very closely for some time and will continue
16 to do so. In fact, we have a resident inspector at this facility on a full-time basis.
17 We believe that SMS has made significant strides in adopting a nuclear safety
18 culture at this facility. However, we continue to monitor SMS's work very closely
19 and SMS's ability to meet the fabrication schedules required.

20 I cannot leave this topic without mentioning my appreciation for the work
21 of our NND construction oversight and financial oversight teams. They are

1 among the most experienced, motivated and capable teams in our Company. They
2 are doing an exceptional job in overseeing the costs and quality of the project.

3 **Q. WHAT COMMITMENTS DID SCE&G MAKE IN THE 2008 BLRA**
4 **PROCEEDINGS CONCERNING DSM AND CONSERVATION**
5 **PROGRAMS?**

6 A. In its original BLRA application, SCE&G recognized the importance of
7 reviewing and reinvigorating its DSM programs in light of growing societal
8 interest and receptivity to them. In the 2008 proceeding, SCE&G made the
9 commitment to have outside consultants with national standing conduct a
10 comprehensive review of potential DSM programs for SCE&G and to bring the
11 resulting recommendations back to the Commission for approval and
12 implementation. SCE&G did so and in Order No. 2010-472 the Commission
13 approved an initial suite of nine cost-justified DSM programs for SCE&G which
14 included programs and measures to reach all customer classes.

15 **Q. WHAT HAS BEEN THE RESULT?**

16 A. SCE&G has completed the review and analysis of the first full year of
17 implementation of its current DSM program. During the 2011 program year,
18 SCE&G invested \$11 million in DSM programs and the Company reduced system
19 demands by approximately 10 MW. One of the largest single programs has been
20 our Home Energy Report program. Approximately 28,000 customers have
21 participated in this program. However, the program with the greatest impact on
22 customers' demands has been our program to place discounted high-efficiency

1 lighting fixtures and bulbs on the shelves of local retailers. This program has
2 assisted in the sales of over 1.2 million discounted high-efficiency light bulbs in
3 our service territory since it was initiated.

4 **Q. IN THE 2008 BLRA PROCEEDINGS WHAT DID SCE&G SAY ABOUT**
5 **THE POSSIBILITY OF RETIRING OLDER COAL UNITS?**

6 A. In the 2008 BLRA hearings, we indicated that building nuclear generation
7 gives us flexibility in our generation's plans to consider retiring older coal
8 generation units. We committed to review SCE&G's system resource
9 requirements to determine if it were possible to retire older coal fired generation
10 units in future years.

11 **Q. WHAT HAS BEEN THE RESULT?**

12 A. As a result of increasingly stringent environmental regulations, lower than
13 forecasted rates of growth in electric demand, the effects of DSM programs, and
14 the prospective availability of new nuclear base load generation, SCE&G has
15 made the decision that it will retire from service the 90 MW Canadys 1 coal-fired
16 unit, and will switch the 95 MW Urquhart 3 coal-fired unit to gas-fired operation
17 only. In addition, SCE&G's current base-case Integrated Resource Plan ("IRP")
18 calls for four additional coal-fired units to be retired in 2017-2018 when Units 2
19 and 3 enter commercial service. While these plans are subject to ongoing review
20 and revision, it is our present intention to retire 730 MW of older coal-fired
21 capacity by the end of 2018.

1 **Q. CAN YOU COMMIT TO THESE RETIREMENTS TODAY?**

2 A. No. Our first priority is to serve our customers safely, reliably and
3 efficiently. If our customers need power from these units in future years, and if
4 we can use them for some additional time within the established environmental
5 regulations, we should have the flexibility to do so. Given what we know today,
6 our intent is to retire these units within the time frames indicated. But it would not
7 be in the best interest of customers or the state to paint us into a corner with
8 binding commitments as to the timing of these retirements.

9 **Q. PLEASE DISCUSS SCE&G'S COMMITMENTS CONCERNING ITS**
10 **RECEPTIVITY TO ALTERNATIVE GENERATION WHERE**
11 **PRACTICAL AND COST JUSTIFIED.**

12 A. In the 2008 BLRA hearings, we testified that the decision to build the Units
13 notwithstanding, SCE&G would not minimize the potential that alternative energy
14 might serve as a supplemental source of generation when practical and cost
15 justified.

16 **Q. WHAT HAS HAPPENED IN THIS REGARD?**

17 A. In 2011, SCE&G installed the largest thin laminate solar generation system
18 in the Southeast, and the sixth largest such system in the nation. The installation
19 covers 10 acres of rooftop at Boeing's North Charleston production facility and at
20 peak capacity generates 2.6 MW or enough power to serve 250 average homes on
21 SCE&G's system. The installation is expected to generate approximately 3,500
22 MWH per year. In addition, in 2011 SCE&G generated 336,604 MWH in

1 renewable energy using biomass fuels at its North Charleston facility located at the
2 KapStone Charleston Kraft, LLC plant. In partnership with SCE&G, Duke,
3 Progress, ORS and the South Carolina Energy Office, created Palmetto Clean
4 Energy (“PaCE”) to provide customers a voluntary program to promote the
5 development of renewable energy resources. Launched in 2008, PaCE uses funds
6 collected voluntarily from customers to pay renewable generators a supplemental
7 financial incentive for producing renewable energy. Currently, 150 customers
8 own renewable generation and participate in SCE&G's net metering programs.
9 This customer-owned generation (solar, wind and biomass) offsets energy
10 purchased from the grid, uses the grid to store excess energy produced or sells all
11 energy produced to SCE&G at a small producer power rate.

12 **Q. PLEASE DISCUSS SCE&G’S COMMITMENT TO ENSURE THE**
13 **CONTINUED SUPPORT OF THE INVESTMENT COMMUNITY FOR**
14 **THIS PROJECT.**

15 A. During 2008, SCE&G committed to use the tools at its disposal to raise the
16 funds required for this project on reasonable terms and to ensure that the
17 investment community remained supportive of the project and the Company’s
18 access to capital in general.

19 **Q. WHAT HAS BEEN THE RESULT?**

20 A. As of the end of the second quarter of 2012, SCE&G will have successfully
21 financed the investment of approximately \$1.5 billion in capital in construction of
22 the Units. That represents approximately 26% of the current cost forecast of \$5.8

1 billion. We have done so while maintaining a solid investment-grade credit
2 rating, the support of the investment community for the Company's financial
3 plans and strategic direction, and the Company's ability to raise capital for this
4 project and other needs of its system on reasonable terms. Our last two bond
5 financings have been at some of the lowest interest rates in the history of the
6 electric utility industry. These low rates benefit our customers directly since
7 lower costs of debt translate directly into lower rates under the BLRA and under
8 general rate making principles.

9 **Q. HOW HAS THIS BEEN ACCOMPLISHED?**

10 A. As promised in 2008, SCE&G has been guided by values of transparency
11 and candor in our dealing with regulators and the public in this matter. Under the
12 oversight of the Commission and ORS, we have implemented a quarterly reporting
13 process that sets the standard nationwide for reporting on utility construction
14 projects. As I have mentioned in past testimony, we have been told repeatedly by
15 analysts who follow this industry closely that no utility construction project
16 anywhere in the nation provides a higher level of public disclosure and regulatory
17 transparency than is being provided for this project. In addition, we have come to
18 the Commission regularly to update cost projection and construction schedules as
19 circumstances warrant.

20 **Q. WHAT ROLE DOES REGULATION PLAY IN THIS?**

21 A. The project could not be where it is today without the tough but consistent
22 and fair-minded regulatory oversight we have received from the Commission and

1 ORS. We understand our responsibility as a company is to manage the project
2 prudently and to bring our issues and challenges to the Commission and ORS in a
3 candid and transparent way. We appreciate the accountability that regulatory
4 oversight provides. For its part, the investment community is very comfortable
5 with the consistency and predictability of our annual revised rates filings and
6 update filings and with the way that this project is being managed from a
7 regulatory standpoint. With continued reasonable decision-making by the
8 Commission and ORS, and reasonable market conditions, we do not see any
9 reason to doubt our ability to continue to manage the financial requirements of this
10 project.

11 **Q. HOW DOES FILING FOR UPDATED COST FORECASTS IN THIS**
12 **PROCEEDING FIT WITHIN THESE COMMITMENTS?**

13 A. Filing for updated cost forecasts is fully consistent with our commitment to
14 transparency and candor. Our goal is to disclose adjustments to our forecasts to
15 the Commission, ORS and the public as they become known and to seek
16 Commission approval of changes in estimates in a timely manner when that is
17 required. The present request is part of that approach.

18 **Q. ARE ANY OF THE ADJUSTMENTS IN COSTS REFLECTED HERE THE**
19 **RESULT OF IMPRUDENCE BY THE COMPANY?**

20 A. No. To the contrary, these costs reflect reasonable and prudent costs of
21 constructing these Units. They are the result of continuing to refine cost forecasts

1 as the project evolves and to surface and resolve cost issues under the EPC
2 Contract as they arise.

3 **Q. DOES SCE&G EXPECT TO COME TO THE COMMISSION WITH**
4 **FURTHER ADJUSTMENTS TO THE COSTS AND SCHEDULES OF THE**
5 **UNITS IN THE FUTURE?**

6 A. We are putting before the Commission the changes we know to be
7 necessary at this time. We do not know whether further adjustments in the costs
8 and schedules for the Units will be needed in the future. However, we would
9 point out that we are approximately six years into a 12 year project.

- 10 • As to permitting and design, the standard plant design for the Units is
11 essentially complete. The COL and other major construction and operation
12 licenses and permits are now in hand.
- 13 • As to the EPC Contract, the additional costs related to initial design
14 improvements and initial licensing have been quantified and agreed to. Full
15 notice to proceed has been given to Westinghouse/Shaw. Westinghouse/Shaw
16 bears the principal price risk for the majority of what remains to be spent under
17 the EPC Contract.
- 18 • As to the initial procurement, fabrication, and construction work on the project,
19 the initial procurement of the major equipment for the Units is complete. With
20 limited exceptions fabrication is going well. The initial site work and
21 excavation work on site are complete. Nuclear safety related construction
22 work has begun.

- 1 • As to Owners cost and Transmission cost, SCE&G has detailed training and
2 staffing plans in hand for the Units. We have now conducted a thorough
3 review of those staffing plans. The routing for most of our transmission
4 projects is done. Substation sites and rights-of-way for much of the
5 transmission work have been obtained and the final siting proceedings are
6 underway before the Commission.

7 We continuously review and update our project plans and forecasts as does
8 Westinghouse/Shaw. No project of this magnitude is static from either a cost or a
9 schedule standpoint. With such a project, the question is not whether you will
10 encounter challenges, but whether you have the leadership team, experience and
11 attitude to respond to the inevitable challenges effectively. The financial markets
12 have consistently supported this project because they have seen how the SCE&G
13 teams, with appropriate support and accountability from the Commission and
14 ORS, have responded to the challenges that have arisen in this project. As we
15 begin nuclear-safety related work on site, risks will shift from licensing, design,
16 and procurement, to shipping logistics, on-site construction and start-up and
17 acceptance testing. Changes in cost forecasts or construction schedules may well
18 be required in the future. But the work we have done to date has put us in a
19 position where we are confident of our ability to meet challenges in the future.

20 **Q. WHAT ARE YOU ASKING THE COMMISSION TO DO?**

21 A. SCE&G is asking the Commission to approve the updated cost forecasts
22 and construction schedules for the Units as presented in the petition in this matter

1 and in the testimony of Mr. Byrne, Ms. Walker and other witnesses. SCE&G
2 requests that the Commission find that the changes in cost and construction
3 schedules are the result of normal and expected changes in a project of this size
4 and complexity, and have not been shown by any party to be the result of
5 imprudence by the Company.

6 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

7 A. Yes. It does.